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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,950

06/27/2003

Wenpeng Hsueh

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27906

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12/09/2004

PATENT LAW OFFICES OF DAVID MILLERS  
6560 ASHFIELD COURT  
SAN JOSE, CA 95120

EXAMINER

NATALINI, JEFF WILLIAM

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,950	<b>Applicant(s)</b> HSUEH ET AL.	
	<b>Examiner</b> Jeff Natalini	<b>Art Unit</b> 2858	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-23 and 27-36 is/are rejected.
- 7) ☒ Claim(s) 24-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/27/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### ***Election/Restrictions***

Applicant's election with traverse of invention II (claims 13-27 and 33-36) in the reply filed on September 29, 2004 is acknowledged. The traversal is on the ground(s) that the search for inventions II and III (claims 28-32) will not provide an undue burden on the examiner and they contain many common features. With respect to this argument claims 13-36 will be examined.

Claims 1-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 29, 2004.

Therefore, claims 13-36 are to be examined, and claims 1-12 are cancelled.

### ***Drawings***

Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 28, 29, 31, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Gibson et al. (Pub 2003/0146082).

In regard to claim 28, Gibson et al. teaches a detection process comprising:

(a) applying a first drive signal to a lamp (pg 2, para (paragraph) 31; a lamp produces a certain amount of gas based on the regulator);

(b) measuring ionization resulting from exposing a gas mixture to output from the lamp (pg 3, para 40);

(c) determining whether the ionization measured indicates the gas mixture contains a concentration of ionizable gas that is above a threshold level (pg 2-3 para 32); and

(d) in response to the concentration being above the threshold level, applying a second drive signal to the lamp and repeating (b) and (c) (pg 3-4 para 43; discloses that the sensing of the concentration of the gas level and adjustments made will be continuous in the feedback circuit, so steps (b) and (c) will be continuously repeated as the sensors detect changes in the air).

In regard to claim 29, Gibson et al. teaches switching between applying the first drive signal and the second drive signal based on measurements of the concentration (pg 3 para 40; based on the measurement gas could be added, and then after another measurement the gas could be regulated back to the original level).

In regard to claim 31, changing between the first drive signal and the second drive signal to provide new power levels in response to a trigger event that indicates the intensity of the output of the lamp may have changed (pg 3 para 40).

In regard to claim 32, Gibson et al. teaches the detection process for a photo-ionization detector (pg 3 para 39).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 19, 22, 23, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art.

In regard to claim 13 and 30, Gibson et al. discloses, a process for operating a detector comprising:

(a) generating a measurement signal from ionization that arises when exposing sample gas to output from a lamp operated at an initial level of a drive power (pg 2, para (paragraph) 31; a lamp produces a certain amount of gas based on the regulator);

(b) determining a concentration of ionizable gases using the measurement signal generated in step (a) (pg 3, para 40);

(c) changing the drive power to a new level in response to a trigger event that indicates that intensity of the output of the lamp may have changed (pg 2-3 para 32);

(d) generating the measurement signal from ionization that arises when exposing sample gas to the output from the lamp operated at the new level and (e) determining a concentration of the ionizable gases using the measurement signal generated in step (d) (pg 3-4 para 43; discloses that the sensing of the concentration of the gas level and adjustments made will be continuous in the feedback circuit, so steps (c), (d), and (e) (corresponding to (a) and (b)) will be continuously repeated as the sensors detect changes in the air).

Gibson et al. lacks wherein after the concentration of the gas is determined, there is a mapping of measurement signal levels to concentration.

Sun et al. teaches mapping measurement signal levels to concentration in the gas under test (col 7 line 21-31).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to map the measurement signal level to concentration of the gas to be determined as taught by Sun et al. in order to be able to detect the presence of one or more suspected gasses (col 7 line 36-37).

Admitted prior art teaches that the conventional PID maps the measurement signal to known concentrations of the span gas (specification: pg 2, para 5).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to map the measurement to known concentrations of the gas as taught by the admitted prior art in order to use the measurements during normal operation (specification: pg 2, para 5).

In regard to claim 19, Gibson et al. teaches wherein the trigger event is a measurement of intensity of the lamp indicating that the intensity has fallen from a previous intensity level (pg 3 para 40).

In regard to claim 22, Gibson et al. teaches wherein steps (c), (d), and (e) are repeated during operation (pg 3-4 para 43; discloses that the sensing of the concentration of the gas level and adjustments made will be continuous in the feedback circuit, so steps (c), (d), and (e) will be continuously repeated as the sensors detect changes in the air).

In regard to claim 23, Gibson et al. teaches wherein repeating steps (c), (d), and (e) occurs between consecutive calibrations of the detector (pg 3, para 40, calibration is accomplished after these steps are performed as the sensors and regulators improve the air stream around the system, therefore calibrating the system to acceptable standards).

In regard to claim 27, Gibson et al. teaches the detection process for a photo-ionization detector (pg 3 para 39).

Claims 14 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art as applied to claim 13 above, and further in view of Cheung (2002/0171819).

Gibson et al. as modified lacks wherein the trigger even comprises reaching an operating time or fixed interval of time since the last calibration.

Cheung teaches calibration scans at the end of a given time period, this will occur continuously, and thus have an operating time between each calibration (pg 2, paragraph 18).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to have a fixed amount of time between each calibration as taught by Cheung in order to account for the fact that the longer a lamp has been on the more stable it gets, so there must be a fixed number of calibrations to control this (pg 2 paragraph 18).

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art, and Cheung (2002/0171819) as applied to claims 14 and 13 above, and further in view of Kuroe (5703489).

Gibson et al. as modified lacks wherein the trigger event has parameters selected according to previous calibrations so that a change between a drive power of the last calibration and a preceding calibration is selected to select the operating time based or to select an amount of change in the drive power.



Kuroe teaches wherein the trigger event has parameters selected according to previous calibrations (col 6 line 50-62) so that a change between a drive power of the last calibration and a preceding calibration is selected to select the operating time based (col 6 line 50-54) or to select an amount of change in the drive power (col 6 line 55-58).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. as modified to take into account previous calibrations to select the time between calibrations or the change in drive power for each calibration as taught by Kuroe in order to reduce any timing inaccuracies to increase the overall accuracy of the calibration (col 6 line 33-44).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art as applied to claim 13 above, and further in view of Hsi (5773833).

Gibson et al. as modified lacks wherein the trigger event is a change in a zero baseline that corresponds to the measurement signal when the sample gas is free of the ionizable gases.

Hsi teaches that frequent calibration of the detector at "zero gas" is needed (col 2 line 8-10).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to do a calibration when the sample gas is free of the ionizable gas "zero gas condition" as taught by Hsi in order to re-establish a correct baseline current (col 2 line 10).

Claims 21, 33, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art as applied to claim 13 above, and further in view of Kim et al. (6262542).

Gibson et al. as modified lacks a process that includes sensing whether a lamp is operating properly when the drive power is at a new level, this sensing includes sensing the operation of the drive circuit and comparing the signal at the new level with the signal when a drive power is providing more power to the lamp; and in response to this sensing increasing the drive power to provide more power to the lamp.

Kim et al. teaches sensing whether a lamp is operating properly when the drive power is at a new level, this sensing includes sensing the operation of the drive circuit (abstract) and comparing the signal at the new level with the signal when a drive power is providing more power to the lamp (col 3 line 57 – col 4 line 3; the circuit will continuously monitor the drive current that is going through to the lamp, so even when the current is increased, it will still be monitored to make sure it was a proper amount; thus taking into account how much the new additional current is helping the lamp compared to the output of the lamp before the drive current was increased); and in response to this sensing increasing the drive power to provide more power to the lamp (col 4 line 1-3).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. as modified to sense whether the lamp is

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operating properly at a drive power (that could include comparing a drive power with a increased drive power) and in response increasing the drive power to provide more power to the lamp as taught by Kim et al. in order to achieve a desired current level in a lamp (col 3 line 45-49).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (Pub 2003/0146082) in view of Sun et al. (6320388) or admitted prior art, and Kim et al. (6262542) as applied to claim 33 above, and further in view of Sandor et al. (5528288).

Gibson et al. as modified lacks wherein the sensing of the lamp comprising sensing light output from the lamp.

Sandor et al. teaches a known method for monitoring the instantaneous intensity of the light in the integrating cylinder (lamp) with a light intensity sensor to develop a correction factor to increase/decrease the lamp drive current (col 2 line 17-22).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to sense the light output from the lamp to determine proper operation as taught by Sandor et al. in order to improve the overall illumination performance (col 2 line 21-22).

***Allowable Subject Matter***

Claims 24-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to claim 24, the prior art does not teach or render obvious the claimed method wherein each calibration of the detector comprises selecting a course level, applying the drive power, recording the measurement signal and repeating these three steps for each of the plurality of course levels before setting the initial level of drive power to the desired course level and combination as claimed.

Claims 25 and 26 would be allowable based on their dependence to claim 24 if it was rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Welch (5115668) teaches determining a calibration curve for a given lamp to be tested, and to enable measured luminance values with the reference curve. Yang et al. (6661233) teaches detecting total concentration of a gas above a threshold level so as to detect the class of chemicals having ionization energies below a selected limit; continuously samples and monitors the surrounding atmosphere.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 571-272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff Natalini



**N. Le**  
**Supervisory Patent Examiner**  
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